# Complete Summary

## GUIDELINE TITLE

ACR Appropriateness Criteria™ for pulsatile abdominal mass.

## BIBLIOGRAPHIC SOURCE(S)

Grollman J, Bettmann MA, Boxt LM, Gomes AS, Henkin RE, Higgins CB, Kelley MJ, Needleman L, Pagan-Marin H, Polak JF, Stanford W. Pulsatile abdominal mass. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):55-9. [29 references]

## COMPLETE SUMMARY CONTENT



## SCOPE

### DISEASE/CONDITION(S)

Pulsatile abdominal mass

### GUIDELINE CATEGORY

Diagnosis

### CLINICAL SPECIALTY

Cardiology
Emergency Medicine
Family Practice
Geriatrics
Internal Medicine
Radiology
Surgery

### INTENDED USERS

Health Plans
Hospitals
Managed Care Organizations
Physicians
Utilization Management

### GUIDELINE OBJECTIVE(S)

To evaluate the appropriateness of initial radiologic examinations for a pulsatile abdominal mass

### TARGET POPULATION

Patients with pulsatile abdominal mass

### INTERVENTIONS AND PRACTICES CONSIDERED

1. Computed tomography angiography
2. Aortic ultrasound
3. Computed tomography with contrast
4. Aortography
5. Computed tomography without contrast
6. Abdominal plain films
7. Magnetic resonance imaging
8. Magnetic resonance angiography
9. Peripheral runoff angiography
10. Abdominal ultrasound
11. Aortic duplex ultrasound
12. Visceral angiography
13. Intravenous pyelogram

### MAJOR OUTCOMES CONSIDERED

Utility of radiologic examinations in differential diagnosis

## METHODOLOGY

### METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches of recent peer-reviewed medical journals, primarily using the National Library of Medicine's MEDLINE database. The developer identified and collected the major applicable articles

### NUMBER OF SOURCE DOCUMENTS

The total number of source documents identified as the result of the literature search is not known.

## METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Delphi Method)
Weighting According to a Rating Scheme (Scheme Not Given)

## RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

## METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

One or two topic leaders within a panel assume the responsibility of developing an evidence table for each clinical condition, based on analysis of the current literature. These tables serve as a basis for developing a narrative specific to each clinical condition.

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus (Delphi)

## DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Since data available from existing scientific studies are usually insufficient for meta-analysis, broad-based consensus techniques are needed to reach agreement in the formulation of the Appropriateness Criteria. Serial surveys are conducted by distributing questionnaires to consolidate expert opinions within each panel. These questionnaires are distributed to the participants along with the evidence table and narrative as developed by the topic leader(s). Questionnaires are completed by the participants in their own professional setting without influence of the other members. Voting is conducted using a scoring system from 1-9, indicating the least to the most appropriate imaging examination or therapeutic procedure. The survey results are collected, tabulated in anonymous fashion, and redistributed after each round. A maximum of three rounds is conducted and opinions are unified to the highest degree possible. Eighty (80) percent agreement is considered a consensus. If consensus cannot be reached by this method, the panel is convened and group consensus techniques are utilized. The strengths and weaknesses of each test or procedure are discussed and consensus reached whenever possible.

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Criteria developed by the Expert Panels are reviewed by the American College of Radiology (ACR) Committee on Appropriateness Criteria and the Chair of the ACR Board of Chancellors.

# RECOMMENDATIONS

## MAJOR RECOMMENDATIONS

ACR Appropriateness Criteria™

Clinical Condition: Pulsatile Abdominal Mass

| Radiologic Exam Procedure | Appropriateness Rating | Comments |
|---|---|---|
| Computed Tomography Angiography | 8 | |
| Aortic Ultrasound | 8 | The definitive screening modality but only measures aortic diameter accurately. |
| Computed Tomography with Contrast | 8 | Accurately defines aortic size and useful in defining extent. Relatively quick with acceptable cost. |
| Aortography | 8 | Most accurately defines extent and branch involvement but less accurate in defining diameter. Expensive. |
| Computed Tomography without Contrast | 7 | Useful even when contrast injection contraindicated. Screening helical computed tomography is very rapid and accurate. |
| Abdominal Plain Films | 5 | Easily performed and inexpensive, but not accurate in estimating diameter of the aorta. Lateral is more accurate than the frontal plain film in |

| | | |
|---|---|---|
| | | estimating aortic diameter. |
| Magnetic Resonance Imaging | 6 | Better than computed tomography in defining extent but more expensive and time consuming. Can diagnose an inflammatory aneurysm. |
| Magnetic Resonance Angiography | 5 | Can define branch involvement with reasonable accuracy but is time consuming and expensive. |
| Peripheral Runoff Angiography | 5 | Important if there are signs or symptoms of peripheral vascular disease. |
| Abdominal Ultrasound | 4 | May miss small aneurysm. Useful if aorta found normal on aortic ultrasound. |
| Aortic Duplex Ultrasound | 3 | Useful only if signs or symptoms of peripheral vascular disease are present and angiography not planned. |
| Visceral Angiography | 3 | Rarely indicated. Risky in patients with large aneurysms. |
| Intravenous Pyelogram | 2 | Only indicated if additional information needed about the urinary tract. |
| Appropriateness Criteria Scale<br><br>1 2 3 4 5 6 7 8 9<br><br>1=Least appropriate 9=Most appropriate | | |

Summary

The consensus of the literature supports aortic ultrasound as the initial imaging modality of choice when a pulsatile abdominal mass is palpated. If an abdominal aortic aneurysm that may need surgical intervention is confirmed by ultrasound or screening helical computed tomography, the decision between contrast helical computed tomography/computed tomography angiography, magnetic resonance imaging/magnetic resonance angiography, or conventional angiography depends upon the availability of the more sophisticated imaging modalities. Helical computed tomography angiography and contrast-enhanced magnetic resonance angiography clearly are satisfactory replacements for angiography except when there are specific unanswered questions about coexistent peripheral vascular, renal, or visceral arterial obstructive disease or involvement by the aneurysm. They now may be performed so rapidly that computed tomography angiography

and magnetic resonance angiography may now be considered as the initial test in patients with high clinical suspicion.

Anticipated Exceptions

In emergent situations where rupture has already occurred, all the imaging modalities may be bypassed, because the patient will need immediate operation for survival. In urgent situations, where clinical diagnosis is fairly certain and rupture is pending, computed tomography angiography and magnetic resonance angiography may be the initial and only examination requested, bypassing ultrasound.

### CLINICAL ALGORITHM(S)

Algorithms were not developed from criteria guidelines.

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on analysis of the current literature and expert panel consensus.

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

Appropriate selection of initial radiologic exam procedures to aid in differential diagnosis of a pulsatile abdominal mass

Subgroups Most Likely to Benefit:

Patients with an abdominal aortic aneurysm

### POTENTIAL HARMS

None identified

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

An American College of Radiology (ACR) Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists, and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those

exams generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the U.S. Food and Drug Administration (FDA) have not been considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Effectiveness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Grollman J, Bettmann MA, Boxt LM, Gomes AS, Henkin RE, Higgins CB, Kelley MJ, Needleman L, Pagan-Marin H, Polak JF, Stanford W. Pulsatile abdominal mass. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):55-9. [29 references]

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

1995 (revised 1999)

### GUIDELINE DEVELOPER(S)

American College of Radiology - Medical Specialty Society

## SOURCE(S) OF FUNDING

The American College of Radiology (ACR) provided the funding and the resources for these ACR Appropriateness Criteria™

## GUIDELINE COMMITTEE

ACR Appropriateness Criteria™ Committee, Expert Panel on Cardiovascular Imaging.

## COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Names of Panel Members: Julius Grollman, MD; Michael A. Bettmann, MD; Lawrence M. Boxt, MD; Antoinette S. Gomes, MD; Robert E. Henkin, MD; Charles B. Higgins, MD; Michael J. Kelley, MD; Laurence Needleman, MD; Heriberto Pagan-Marin, MD; Joseph F. Polak, MD, MPH; William Stanford, MD

## FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

## GUIDELINE STATUS

This is the current release of the guideline. It is a revision of a previously issued version (Appropriateness criteria for pulsatile abdominal mass. Reston [VA]: American College of Radiology [ACR]; 1995. 5 p. [ACR Appropriateness Criteria™]).

The ACR Appropriateness Criteria™ are reviewed after five years, if not sooner, depending upon introduction of new and highly significant scientific evidence. The next review date for this topic is 2004.

## GUIDELINE AVAILABILITY

Electronic copies: Available (in PDF format) from the American College of Radiology (ACR) Web site.

Print copies: Available from ACR, 1891 Preston White Drive, Reston, VA 20191. Telephone: (703) 648-8900.

## AVAILABILITY OF COMPANION DOCUMENTS

None available

## PATIENT RESOURCES

None available

## NGC STATUS

This summary was completed by ECRI on February 20, 2001. The information was verified by the guideline developer on March 14, 2001.

## COPYRIGHT STATEMENT



Date Modified: 11/15/2004